

CLAIMS

1. (Currently Amended) A method comprising:
capturing a first two-dimensional image of an object;
causing a relative motion between the object and a field of view of a capturing device to expose a different aspect of the object to the capturing device;
capturing a second two-dimensional image of the object;
deriving a first three-dimensional digital representation of the object from the first and second two-dimensional images; and
creating a second three-dimensional digital representation by an alternative method.
2. (Currently Amended) The method of Claim 1 further comprising:
automatically combining elements of the first three-dimensional digital representation with elements of the second three-dimensional digital representation to improve quality.
3. (Original) The method of Claim 1 further comprising:
capturing with the capturing device an intensity gradient based three-dimensional representation of the object.
4. (Original) The method of Claim 1 wherein the capturing device comprises a linear image sensing array.
5. (Currently Amended) A method comprising:
capturing a first three-dimensional digital representation of a portion of an object using a first capture method;

capturing a second three-dimensional digital representation of a portion of the object using a second capture method; and

automatically combining elements from the first and second three-dimensional digital representations to improve quality.

6. (Original) The method of Claim 5 wherein at least the first capture method uses active ranging and at least the second capture method uses passive imaging.

7. (Original) The method of Claim 6 wherein the first capture method is intensity gradient ranging and wherein the second capture method is stereoscopy.

8. (Currently Amended) An apparatus comprising:
a digitizer capable of using any of at least two capture methods to capture a three-dimensional digital representation of at least a portion of an object.

9. (Currently Amended) The apparatus of Claim 8 further comprising:
a processor to automatically combine elements from three-dimensional digital representations captured with at least two captured methods to improve quality.

10. (Original) The apparatus of Claim 8 wherein at least a first capture method uses active ranging and at least a second capture method uses passive imaging.

11. (Original) The apparatus of Claim 10 wherein the first capture method is intensity gradient ranging and wherein the second capture method is stereoscopy.

12. (Original) The apparatus of Claim 8 wherein the digitizer comprises:
an image sensing array (ISA) to capture image data in a first mode and tilt data in a second mode; and

a gravitational orientation unit (GOU) responsive to a relative orientation of gravity to alter light falling on the ISA in relation to the relative orientation of gravity.

13. (Original) The apparatus of Claim 12 wherein the GOU comprises:

a pendulum having a reflective element mounted thereon.

14. (Original) The apparatus of Claim 13 further comprising:

a light emitting diode (LED) mounted to cast light on the reflective element when the LED is on.

15. (Currently Amended) The apparatus of Claim 8 wherein the digitizer comprises:

an image sensor array (ISA) to capture three-dimensional data about an object;

a lens/aperture assembly having a plurality of lens/aperture combinations; and

a controller to automatically select a suitable lens/aperture combination based on at least a distance of the object from the ISA.

16. (Currently Amended) The apparatus of Claim 15 wherein each lens/aperture combination is a lens barrel an independent component.

17. (Previously Presented) The apparatus of Claim 8 wherein the digitizer comprises:

a shaft;

a housing;

a bearing coupled to the housing to rotate the housing relative to the shaft;

an image sensing array (ISA) coupled to the housing; and

a spring to bias the shaft relative to the housing, such that successive captures by the image sensing array are consistently aligned with respect to one another.

18. (Original) The apparatus of Claim 17 comprising a bias spring along each bearing axis having a tolerance above a threshold.
19. (New) The apparatus of Claim 8 wherein the digitizer is capable of performing at least two capture methods using a same image sensing array (ISA).
20. (New) The apparatus of Claim 8 wherein one of the capture methods is stereoscopy.
21. (New) The method of Claim 5 wherein the capturing of the first three dimensional digital representation and the second three dimensional digital representation is performed using a same image sensing array (ISA).
22. (New) The method of Claim 5 wherein one of the capture methods is stereoscopy.